

**REMARKS****I. Status of Claims**

Claims 1-15, inclusive, are pending in this Application. Claims 1 and 15 are amended in this response.

II. Response to the 35 U.S.C. § 112 Rejection

The rejection of claim 15 as indefinite is respectfully traversed.

The Examiner was quite correct in that original claim 15 was intended to be dependent on original claim 14. Original claim 15 has, by this paper, been so amended.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 is requested.

III. Response to the 35 U.S.C. § 103 Rejections

The rejections of (1) claims 1-12, inclusive, as unpatentable over Commereuc et al. (US 6,743,958), hereafter Commereuc, and (2) claims 13-15, inclusive, as unpatentable of Commereuc in view of Leffer (US 2,401,649) are both respectfully traversed.

The Examiner takes the position on page 4 of the office action that it would have been obvious to modify Commereuc by passing unconverted C4 hydrocarbons that are "equivalent to the claimed third mixture" (Applicants' metathesis zone effluent 8) to a skeletal isomerization zone because, "as shown by Commereuc, a propylene effluent from a metathesis zone commonly contains other components such as C4 hydrocarbons."

This position is a clear assumption of the invention based on Applicants' disclosure rather than a finding of the teaching in the prior art it self.

In making this assumption, the Examiner has used the term "C4 hydrocarbons" too loosely.

Applicants' and Commereuc's skeletal isomerization zones operate on isobutene (isobutylene), from which they form additional quantities of butene-1 and butene-2, Applicants' original specification, page 8, lines 12-16, and Commereuc, column 2, lines 19 and 20. C4 hydrocarbons such as butene-1 and butene-2 are not feed materials for a skeletal isomerization process; they are products of that process. Thus, the disclosure of a C4 hydrocarbon that contains butene-1, butene-2, and no isobutene is not a suggestion to one skilled in the art of a feed material for a skeletal isomerization zone.

Reference to Table 1 of Commereuc shows that his metathesis unit output (Sortie Metathese) 8 contains no isobutene. Thus, Commereuc's "effluent from a metathesis zone" does not contain "C4 hydrocarbons" that are useful in Commereuc's or Applicants' skeletal isomerization zones. Accordingly, Commereuc's metathesis zone effluent is not "equivalent to the claimed third mixture" of Applicants' that expressly contains iso-olefins. Finally, since Commereuc's metathesis zone effluent 8 contains no isobutene, Commereuc does not fairly suggest to one skilled in the art the passing of this effluent to Commereuc's skeletal isomerization zone 3.

Again playing loose with the term "C4 hydrocarbons," the Examiner states on page 4 of the office action that Commereuc discloses that

"C4 hydrocarbons recovered in the disclosed process, although at a different point than claimed, can be skeletally isomerized to produce more of the desired C4 butenes used as feed to the process. Therefore, from this teaching, one would realize that C4 hydrocarbons recovered from the metathesis zone effluent (underscoring added) could be isomerized (presumably the Examiner meant skeletally isomerized) to produce more feed to the process."

One skilled in the art would not realize any such thing because, after reading the aforesaid Table 1, he would know that C4 hydrocarbons recovered from Commereuc's metathesis zone 4 are totally devoid of the one chemical, isobutene, needed for Commereuc's skeletal isomerization zone 3 to function.

Commereuc's required splitting step 2 forms stream 5 that is "concentrated" in isobutene, and, therefore, a useful feed for skeletal isomerization, Commereuc, Column 3, lines 55 and 56.

What Applicants' invention does that is both novel and unobvious over a fair reading of Commereuc is to pass their double bond isomerization product directly to a metathesis zone without any intermediate splitting of that product as required by Commereuc. By this paper, Applicants' original claim 1 has been amended to further emphasize this patentable distinction over the teaching of Commereuc.

Applicants' invention, as claimed, also patentably distinguishes over Commereuc by eliminating splitter 2 of Commereuc without eliminating the function thereof.

Applicants' claimed process produces a "metathesis zone effluent" 8 that, unlike Commereuc's "metathesis zone effluent" 8, contains the isobutene component that is necessary for the operation of a skeletal isomerization unit. This is totally un-suggested by Commereuc, directly, indirectly, or by any sort of implication.

By virtue of Commereuc's total absence of isobutene in his metathesis effluent stream 8, Commereuc actually teaches away from passing metathesis zone effluent to a skeletal isomerization process.

The only suggestion to be found for the claimed process is in Applicants' disclosure, and it is improper to rely on Applicants' disclosure to buttress the clear deficiencies of the teaching of Commereuc.

To urge that it is obvious to do what Applicants' claim, in spite of the aforesaid deficiencies in the disclosure of Commereuc, is to assume Applicants' invention rather than to find the teaching in the art which one skilled in the art needs under the law, *In re Soli*, 137 USPQ 797.

Leffer supplies none of the above-noted deficiencies of Commereuc.

Since the Examiner has not found nor provided the motivation for modifying the process of Commereuc to meet the novel and unobvious aspects


of Applicants' claimed invention, the burden of establishing a prima facie case of obviousness has not been met.

Further, the legal test is obviousness of the invention as a whole, not of pieces when dissected out after considering Applicants' disclosure, Harpman v. Watson, 124 USPQ 169, and the rejections fail to meet this test.

Accordingly, reconsideration and withdrawal is requested of both the rejection over Commereuc and the rejection over Commereuc in view of Leffer.

Wherefore, it is submitted that this Application is now in condition for immediate allowance, and such action is hereby requested.

Respectfully submitted,

By: 
Dennis M. Kozak
Reg. No. 28,318
Attorney for Applicants
Lyondell Chemical Company
3801 West Chester Pike
Newtown Square, PA 19073
Phone 610-359-2067
March 8, 2006
Customer Number: 24114